



US005879690A

United States Patent [19]**Perricone**[11] **Patent Number:** **5,879,690**[45] **Date of Patent:** ***Mar. 9, 1999**

[54] **TOPICAL ADMINISTRATION OF
CATECHOLAMINES AND RELATED
COMPOUNDS TO SUBCUTANEOUS
MUSCLE TISSUE USING PERCUTANEOUS
PENETRATION ENHANCERS**

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[*] Notice: The term of this patent shall not extend
beyond the expiration date of Pat. Nos.
5,554,647 and 5,643,586.

[21] Appl. No.: **851,222**

[22] Filed: **May 5, 1997**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 525,977, Sep. 7, 1995, Pat.
No. 5,643,586.

[51] **Int. Cl.⁶** **A61K 7/48**

[52] **U.S. Cl.** **424/401; 514/944; 424/DIG. 5**

[58] **Field of Search** 424/401, DIG. 5;
514/944

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[57] **ABSTRACT**

Compositions for the topical treatment of sagging subcutaneous muscle and overlying cutaneous tissue contain an active ingredient exhibiting or producing catecholamine activity such as catecholamines and/or related compounds in a dermatologically acceptable carrier that contains at least one percutaneous penetration enhancer. Exemplary catecholamines include adrenaline, norepinephrine, dopamine and their precursors; catecholamine precursors such as tyrosine and phenylalanine are preferred. Many embodiments, particularly those employing tyrosine and/or phenylalanine as a catecholamine precursor, further contain a neurotransmitter synthesis enhancer such as dimethylaminoethanol, and other co-factors such as vitamin B₆ and pantothenic acid or calcium pantothenate are included in the composition to enhance the action of the active ingredients. Other compounds that scavenge free radicals and antioxidants may also be added.

20 Claims, No Drawings